

REMARKS

Claims 1 to 4, 7 to 19, and 21 to 29 are pending, of which claims 1, 12, 14 and 26 are independent. Favorable reconsideration and further examination are respectfully requested.

Independent claims 1 and 26 were rejected over U.S. Patent No. 6,274,937 (Ahn) in view of U.S. Patent No. 6,628,178 (Uchikoba), U.S. Patent No 6,091,310 (Utsumi), and newly-discovered U.S. Patent No. 7,190,083 (Cave). The rejections of the dependent claims include rejections over previously-cited Chakravorty, Li, Asahi, Figueroa, Liu, Daniels, and Juskey.

As shown above, the claims have been amended. The amendments include reciting that the at least one integrated impedance converter is configured to transform an impedance of the at least one chip component by 5 % to 400%. Support for this amendment can be found, for example, on page 5, lines 4 to 10 of the original English-language translation.

The following features of former dependent claim 20 were also incorporated into the independent claims:

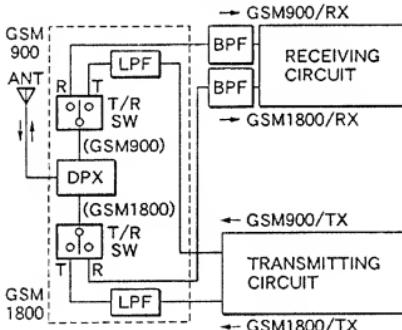
wherein the at least one chip component comprises one or more inputs and outputs; and  
wherein at least one input and/or at least one output of the at least one chip component  
conducts a symmetrical signal.

Page 10 of the Office Action alleges that these features can be found in Uchikoba. In particular, the Office Action states the following:

Regarding claim 20, Ahn/Uchikoba/Utsumi/Cave disclose the electronic component of claim 1. Uchikoba does disclose wherein the at least one chip component comprises at least one or more inputs and outputs [inherently any operational device would]; and wherein at least one input and/or at least one output of the at least one chip component conducts a symmetrical signal [Fig. 9: the receiving circuit would have a clock signal, which is symmetrical].

We respectfully disagree with this characterization of Uchikoba. In this regard, Fig. 9 of Uchikoba (below) shows two separate signal lines for two separate communication systems, each operating in the 900 MHz and 1800 MHz frequency bands, respectively.

**FIG.9**  
Background Art



Regarding Fig. 8, Uchikoba states the following:

FIG. 9 shows a block diagram of the radio frequency circuit of a mobile telephone of GSM dual band type which is most commonly used in the world. In FIG. 9, ANT is an antenna for transmitting and receiving electric waves, DPX is a diplexer (2-frequency filter) for separating a plurality of frequencies, T/R SW is a transmission/receiving switch for switching transmission and

receiving, LPF is a low-pass filter for controlling the radio frequency at a transmission stage, and BPF is a band-pass filter at a receiving stage.<sup>1</sup>

There is no indication in Uchikoba that the signal lines referred to in the Office Action include at least one input and/or at least one output that conducts a symmetrical signal.

Regarding impedance conversion, the Office Action states the following:

In regard to the remarks on page 11 of the arguments, it is asserted that Ahn does not show an impedance converter in Figure 1, but a, inductor capacitor network to nullify parasitic capacitances among other conversions shown in the specification of Ahn. As it is known in the art, inductance, resistance, and capacitance are all instances of impedances, therefore any change in the input capacitance/inductance/resistance is by definition a change in impedance levels.

Cave explains the following in column 2, lines 42 to 63:

FIG. 2 illustrates a schematic block diagram of a high frequency radio transmitter integrated circuit wherein the circuit 18 on die 12 includes a radio transmitter 34 and a power amplifier 36. The radio transmitter 34 is operably coupled to convert a base-band signal 44 into an RF signal 46. The power amplifier 36 is operably coupled to amplify the RF signal 46 to produce an amplified RF signal 48.

The power amplifier 36 provides the amplified RF signal 48 to the bond pad 20 of die 12. Capacitor 16 operably couples the amplified RF signal 48 to the bond post 22 of the package 14. External to the integrated circuit is an inductor 40, a capacitor 38 and an antenna 42. The inductor 40 in combination with capacitor 16 and capacitor 38 form an impedance transformation circuit. Such an impedance transformation circuit is used to match the impedance of the antenna with the output impedance of the power amplifier and may include variable component. Typically, the power amplifier 36 will have an output impedance of approximately 5 OHMS while the antenna will have an input impedance of approximately 50 OHMS. As such, the size of capacitor 16, capacitor 38 and inductor 40 will be sized to provide the desired impedance matching.

Thus, Cave describes conversion between  $5\Omega$  and  $50\Omega$ , which is about a 1000% conversion.

Cave, however, (either alone or in combination with Ahn) does not describe conversion within

<sup>1</sup> Uchikoba, col. 1, lines 53 to 61

the claimed range, i.e., 5 % to 400%. According to our German colleague, lesser conversions can be performed at higher precision than greater conversions.

The remaining art is likewise not understood to disclose or to suggest the foregoing features of the claims. Accordingly, claims 1, 12, 14, and 26 are believed to be patentable.

Dependent claims are believed to define patentable features of the invention. Each dependent claim partakes of the novelty of its corresponding independent claim, in light of the foregoing amendments, and, as such, has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Please charge any additional fees, not already covered by check, or credit any overpayment, to deposit account 06-1050, referencing Attorney Docket No. 14219-075US1.

The undersigned attorney can be reached at the address shown above. Telephone calls regarding this application should be directed to 617-521-7896.

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Respectfully submitted,

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